

#### ABSTRACT

A method for receiving and quantizing a data set originating from collected data is provided. The data set has a plurality of dimensions defined by perpendicular axes, and includes a plurality of data points. Each data point has a data characteristic. The method includes the steps of: receiving the data set; selecting a predetermined number of data classes based on a distribution of the data characteristics of the plurality of data points within the data set, the predetermined number of data classes less than the number of data points; forming a data structure based on the predetermined number of data classes; and resolving each of the plurality of data points into one of the predetermined number of data classes using a method, which includes the steps of locating a plurality of region centers within the data set, each region center associated with one of the predetermined number of data classes; representing formation of a plurality of regions within the data set by iteratively expanding a predetermined geometric representation from each region center radially outward, each iteration of expansion of the predetermined geometric representation occurring by an integer unit of measure associated with a data point, the iterative expansion causing adjacent regions to intersect and form region boundaries, the region boundaries permitted to be non-parallel to the perpendicular axes; and after each iteration of expansion, assigning a value to each of the unassigned data points within each region, the assigned value associated with the predetermined data class of a particular region center, the particular region center being the region center associated with the first region to capture the data point during the iterations of expansion. The resolved data points are associated with the data structure, and, using the associated resolved data points, a modified representation of the collected data is generated.